

REMARKS

Status of the Claims

Claims 1-22 are pending in this application.

Claims 8 and 19-22 are allowed.

Claims 1, 2, 5-7, 9, 12-15, and 18 are rejected.

Claims 3-4, 10-11, and 16-17 are objected to.

Claims 2 and 15 have been cancelled without prejudice.

Claims 1 and 14 have been amended. Support for these amendments can be found throughout the specification, claims, and drawings, as originally filed.

Claims 23-42 have been added. Support for these new claims can be found throughout the specifications, claims, and drawings as originally filed.

Rejection of Claims 1, 5-7, 12, 13, 14, and 18 Under 35 U.S.C. § 102(e)

Claims 1, 5-7, 12-14, and 18 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,701,788 to Babala (hereafter "Babala"). Applicant respectfully traverses the 35 U.S.C. § 102(e) rejection of claims 1, 5-7, 12-14, and 18.

The law is clear that anticipation requires that a single prior art reference disclose each and every limitation of the claim sought to be rejected. The law is also clear that a claim in dependent form shall be construed to incorporate all the limitations of the claim from which it depends.

Amended independent claims 1 and 14 require shared circuits coupled to the sensor element in first and second output circuits, where the shared circuits include circuit elements used by both the first and second output circuits. See claims 1 and 14. Applicant respectfully maintains that this limitation is not taught by Babala.

The Office Action states that Babala discloses a multiple output sensing device including a single sensor element (24, Fig. 2, 5, and 7), where the single sensor element (24) provides a sensor signal that varies with the measured parameter, a first output circuit (26) responsive to the sensor signal and providing a first output signal, and a second output circuit (28) responsive to the sensor signal and providing a second output signal, wherein the first (26) and second output (28) signals are two of multiple outputs (26, 28, 98, Fig.7) from the sensor element (24) and wherein the system diagnostics are performed without two or more sensors (col.3, lines 7-18).

Babala does not disclose a shared circuit coupled to the sensor (24, 84) and the signal conditioning circuits (26, 28, 86, 88, 98), with which the signal conditioning circuits (26, 28, 88, 98) use elements of the shared circuit. Since Babala does not disclose this limitation, Babala fails to disclose each and every element of the present invention, and Applicant respectfully requests withdrawal of the rejection.

Further, dependent claims 5-7 are directly or ultimately dependent upon independent claim 1, dependent claims 12 and 13 are dependent upon independent claim 9, and dependent claim 18 is dependent upon claim 14.

The Office Action also does not argue that Babala anticipates claim 9, and therefore claims 12-13, which include the limitations of claim 9, are not anticipated. Claim 9 requires shared circuits coupled to the sensor element, where the shared circuits provide sensing system operations. See claim 9. Applicant respectfully maintains that this limitation is not shown in Babala, and requests withdrawal of the rejection.

Additionally, amended independent claims 1 and 14 include the limitation of a shared circuit coupled to the sensor element and the first and second output circuits,

where the shared circuit includes circuit elements by both the first and second output circuits. See claims 1 and 14. Since Babala does not disclose the shared circuit, Babala fails to disclose each and every element of the present invention and does not anticipate independent claims 1 and 14. Thus, dependent claims 5-7 which depend from independent claim 1 and include all of the limitations of claim 1 are not anticipated. Also, dependent claim 18 which depends from independent claim 14 and includes all of the limitations of claim 14, is not anticipated. Therefore, Applicant respectfully request withdrawal of the rejection.

Furthermore, the applicant respectfully submits that Babala does not render claims 1, 5-7, 12-14, and 18 obvious. The standard for obviousness is that there must be some suggestion, either in the reference or in the relevant art, of how to modify what is disclosed to arrive at the claimed invention. Further, dependent claims include all the limitations of the claims from which they depend.

Independent claims 1, 9, and 14 require a shared circuit coupled to the sensor element in the first and second output circuits, where the shared circuits include circuit elements used by both the first and second output circuits. See claims 1, 9, and 14. Further, dependent claims 5-7 directly or ultimately depend from independent claim 1, dependent claims 12 and 13 depend from independent claim 9, and dependent claim 18 depends from independent claim 14, and therefore, include all the limitations of the claims from which they depend.

By contrast, the Office Action states that Babala teaches a multiple output sensing device including a single sensor (24, Fig. 2, 5, and 7), single sensor elements (24) providing a sensor signal that varies with the measured parameter and a first output circuit (26) and a second output circuit (28). However, Babala fails to teach,

motivate one having ordinary skill in the art to develop a sensing system having shared circuits between the sensor element and the output circuits with which the shared circuit includes circuit elements used by both the first and second output circuits. All of the drawings of Babala and the specification teach away from the claimed invention because they teach or suggest multiple control devices. Therefore, Applicant respectfully maintains that Babala does not render claims 1, 5-7, 12-14 and 18 obvious.

Rejection of Claims 2, 9, and 15 Under 35 U.S.C. § 103(a)

Claims 2, 9, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,701,788 to Babala in view of Ricks, U.S. Patent No. 6,404,188 (hereafter "Ricks"). Claims 2 and 15 have been canceled, without prejudice and independent claims 1 and 14 have been amended to include the subject matter of cancelled claims 2 and 15. Applicant respectfully traverses the 35 U.S.C. § 103(a) rejection of claim 9. The Applicant's remarks will be directed to remaining claims 1, 9, and 14, since rejected claims 2 and 15 were amended into their respective claims.

The standard for obviousness is that there must be some suggestion, either in reference or in the relevant art, of how to modify what is disclosed to arrive at the claimed invention. Further, dependent claims include all of the limitations of the claims from which they depend.

Amended independent claims 1 and 14 and independent claim 9 require a single sensor element, a first output circuit, a second output circuit, and shared circuits coupled to the sensor element in a first and second output circuit, where shared circuits include circuit elements used by both the first and second output circuits. See claims 1, 9, and 14. Applicant respectfully maintains that Babala in view of Ricks does not teach,

suggest, or motivate one having ordinary skill in the art to develop a sensing system having shared circuits for the first and second output circuits.

The Office Action argues that Babala teaches a multiple output sensing device including a single sensor element (24, Fig. 2, 5, and 7), where the single sensor element (24) provides a sensor signal that varies with the measured parameter, a first output circuit (26) responsive to the sensor signal and providing a first output signal, and a second output circuit (28) responsive to the sensor signal and providing a second output signal, such that the first (26) and second output (28) signals are two of multiple outputs (26, 28, 98, Fig. 7) from the sensor element (24) and where the system diagnostics are performed without two or more sensors (col.3, lines 7-18). The Office Action further states that Babala fails to teach shared circuits coupled to the sensor element in the first and second output circuits. Thus, Babala teaches a single sensor (24) signal and a first output circuit (26) and second output circuit (28) which provide two different output signals without the first (26) and second (28) circuits using elements from a shared circuit.

The Office Action then argues that Ricks teaches a single gear tooth sensor yielding multiple output pulse trains including a comparator or shared circuits (37, Fig.1) coupled to the sensor element (17) in the first and second output circuits (Fig.4), where these shared circuits include circuit elements used by both the first and second output circuits (col. 3, lines 29-41). Ricks further teaches that the sensor (13) transmits a substantially sinusoidal wave to the comparator (37) (col. 3, lines 29-38). The comparator (37) then converts the sensor output wave to a first digital pulse and a second digitally encoded pulse (col. 3, lines 35-41). These pulses are transmitted to the engine controller (47). Thus, Ricks teaches a sensor element (17) connected to a

comparator (37) which is connected to an engine controller (47) without the comparator (37) using shared circuits with another element.

Ricks does not teach or suggest a shared circuits between the sensor (17) and the comparator (37) with which the comparator (37) shares circuit elements because the comparator (37) receives a signal from the sensor (17) and transmits multiple outputs to the engine controller (47). The combination of Babala in view of Ricks does not teach, suggest, or motivate one having ordinary skill in the art to include a shared circuit between the sensor and the output circuits where the first and second output circuits **use the shared** circuits because Babala in view of Ricks does not teach, suggest, or motivate output circuits using shared circuits. Applicant respectfully requests withdrawal of the rejection.

Allowable Matter

The Office Action states that claims 8 and 19-22 are allowable subject matter. Applicant thanks the Examiner for allowing this matter. Also, new claims 23-26 include the subject matter of cancelled claim 2 and claims 5-7, respectively. Claims 23-26 depend from allowed claim 8. New claims 27-31 include the subject matter of claim 4, cancelled claim 2, and claims 5-7, respectively. Claims 27-31 depend from allowed claim 19. New claims 32-36 include the subject matter of cancelled claim 2 and claims 3 and 5-7, respectively. Claims 32-36 are dependant upon allowed claim 20. New claims 37-39 include the subject matter of cancelled claim 15 and claims 17-18, respectively. Claims 37-39 depend from allowed claim 21. New 40-42 include the subject matter of cancelled claim 15 and claims 16 and 18, respectively. Claims 40-42 depend from allowed claim 22. Applicant respectfully maintains that new claims 23-42

are dependent upon allowed subject matter and support for the new claims can be found throughout the specifications, claims, and drawings. Therefore, Applicant respectfully request allowance of claims 23-42.

CONCLUSION

It is respectfully submitted that in view of the above amendments and remarks the claims 1, 3-14, 16-42, as presented, are patentably distinguishable because the cited patents, whether taken alone or in combination, do not teach, suggest or render obvious, the present invention. Therefore, Applicant submits that the pending claims are properly allowable, which allowance is respectfully requested.

The Examiner is invited to telephone Applicant's undersigned attorney at (248) 364-4300 if any unresolved matters remain.

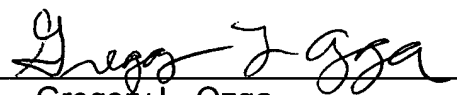
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Respectfully submitted,

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